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SysAdmin Career Trends

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Key Findings

64% of SysAdmins think their role has evolved because of containerization and the cloud

Even with cloud services being popular, everyone would still likely prefer to put most of their assets in their own infra and only put some in the cloud

Monitoring is deemed the most important tool of the trade that IT professionals would recommend for beginners to learn in order to thrive in the industry

Infrastructure Monitoring is considered the most important skill to learn as a SysAdmin while Programming/Scripting is the most important for DevOps professionals

Automation for deployment is the most common project seen in companies for the past 3 years

Monitoring is the top type of tool that SysAdmins use to collaborate with dev teams.

IT professionals from Germany will most likely prefer to keep their infrastructure on-prem than their counterparts in the US.
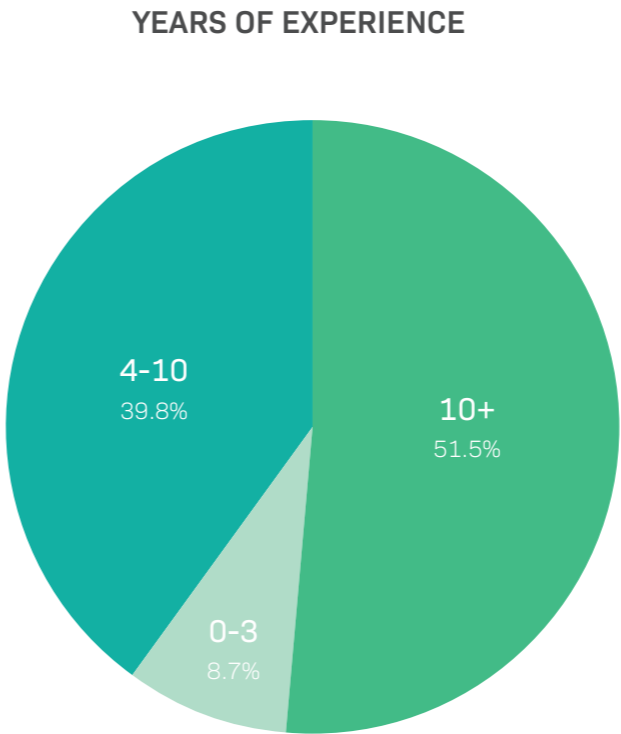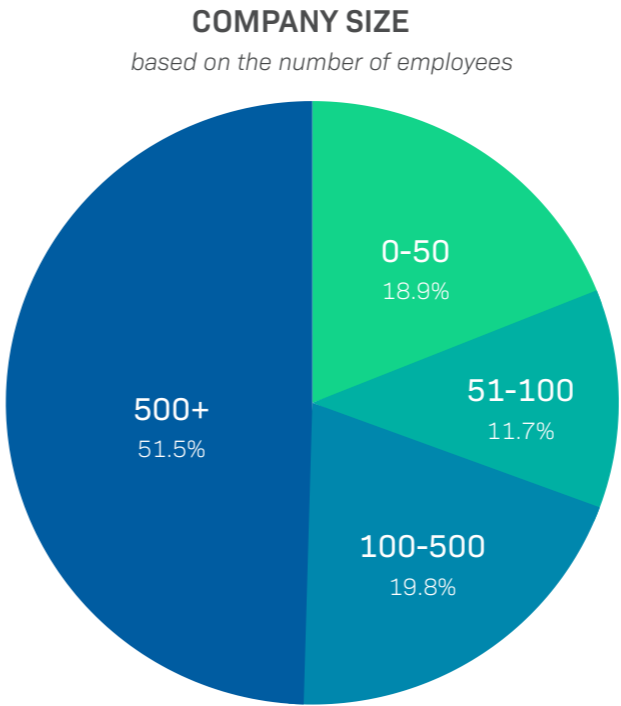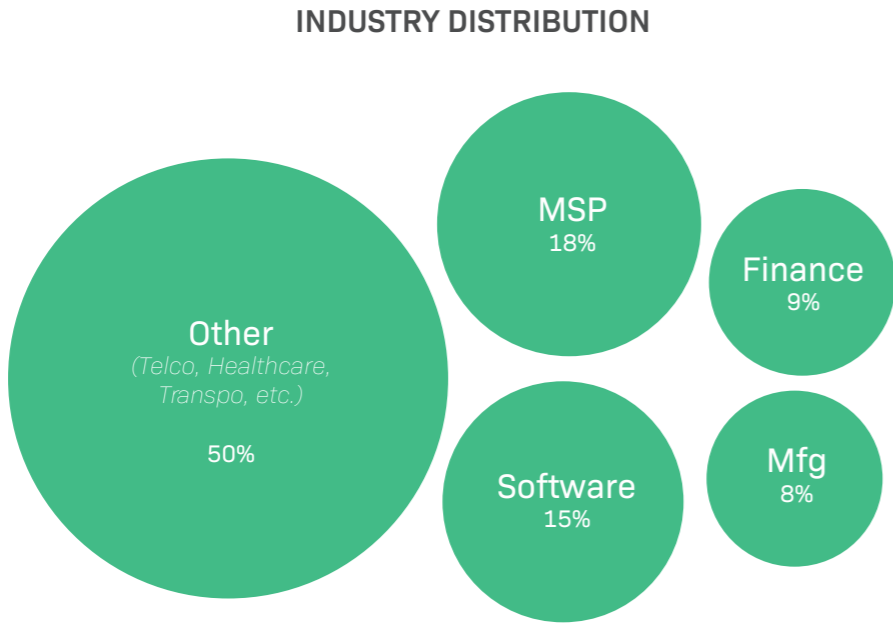
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02

Respondent Demographics

We saw two groups who participated in the survey:
1) individuals who mainly take care of the infrastructure
2) individuals who do the same, but also work closely with development teams

It was an interesting turnout, with half belonging to the first group and half belonging to the second group. For convenience, we will refer to those handling mainly IT infrastructure as **SysAdmins**, and the others as **DevOps Professionals**. We know that the use of this term is probably terribly wrong as there is no DevOps Professional – but for simplicity, this term shall be used throughout this document.

RESPONDENT GROUPS

SysAdmins
Mainly handles the infrastructure

DevOps Professionals
Handles the infrastructure and works closely with dev teams

INDUSTRY DISTRIBUTION

MSP
18%

Finance
9%

Other
(Telco, Healthcare, Transpo, etc.)
50%

Software
15%

Mfg
8%

COMPANY SIZE
based on the number of employees

0-50
18.9%

51-100
11.7%

500+
51.5%

100-500
19.8%

YEARS OF EXPERIENCE
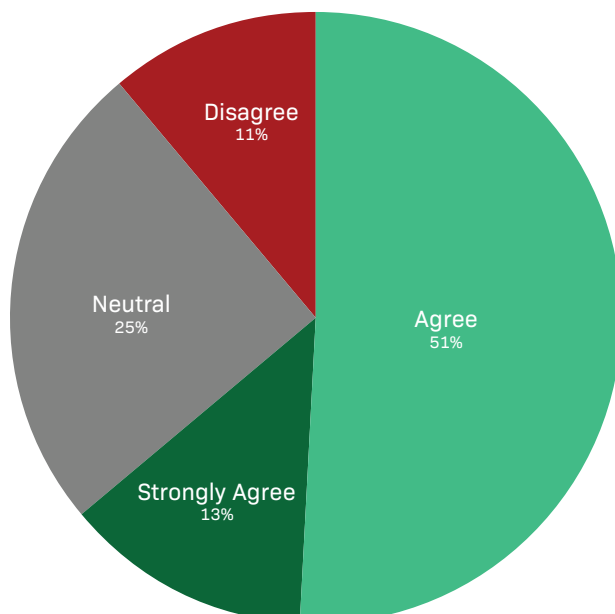
4-10
39.8%

10+
51.5%

0-3
8.7%

Our respondents are mostly highly experienced professionals working for large organizations. We had a diversity of industries represented, with Managed Service Providers, Software, Finance and Manufacturing representing the majority.

03
Recent Industry Shift

The topic of the change in IT Ops has been even more highlighted in 2020. Especially amidst the pandemic, SysAdmins were challenged to immediately cope with the needs of the organization shifting to work from home. In this chapter, we discuss what we saw as the recent trends where organizations have been shifting to in terms of their IT operations. It's important for IT professionals to know these trends to prepare for what the will be considered as new industry standards and learn the skills needed to adapt.

We asked those under the SysAdmin group if they feel their role has evolved because of the advent of containers and the cloud. It's interesting that the majority agreed that their role has changed due to cloud computing and containerization. More than 10% strongly agree with the statement – so there is a significant number of people out there who are deeply-impacted.

The 11% who disagree stand out: it looks like they are the exception, and this might be rather due to the specific environment you are working in – and this can change quickly. What we see with many of our customers is that both of these topics are often mandated top-down from management. Therefore while many SysAdmins might find this shift uncomfortable, it's important to adapt to these trends and not ignore them.
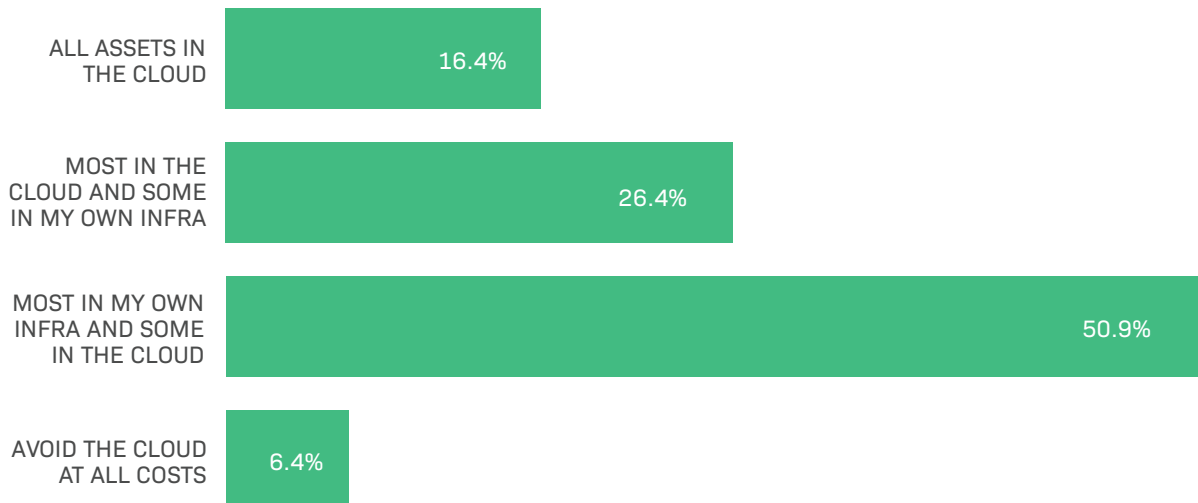
64% of SysAdmins think their role has evolved because of containerization and the cloud

Disagree
11%

Neutral
25%

Agree
51%

Strongly Agree
13%

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MIGRATING TO THE CLOUD

Digging deeper into the effect of the cloud in the evolution of the SysAdmin role, we asked all the respondents for their strategy of choice if they ever need to rebuild their company's infrastructure.

ALL ASSETS IN THE CLOUD — 16.4%

MOST IN THE CLOUD AND SOME IN MY OWN INFRA — 26.4%

MOST IN MY OWN INFRA AND SOME IN THE CLOUD — 50.9%

AVOID THE CLOUD AT ALL COSTS — 6.4%

The cloud comes with many benefits – this seems to be clear to almost all respondents, apart from a few who would avoid the cloud at all costs. The drastic decision to either migrate everything to the cloud, or the other extreme to keep everything in your own infrastructure is not supported by the majority of respondents (77%). Rather the consensus seems to be to carefully weigh your options and decide for each application where to deploy the load to.

This suggests that the new challenge for SysAdmins is to be flexible in maintaining two types of infrastructure, instead of putting all they have in one place. Getting a good understanding of the benefits of each technology is also helpful. Then you can carefully consider all options and not only go with what you already know and what you feel comfortable with.

"I believe automation, scripting, and understanding when cloud solutions are worth the investment are all key technical aspects to know."
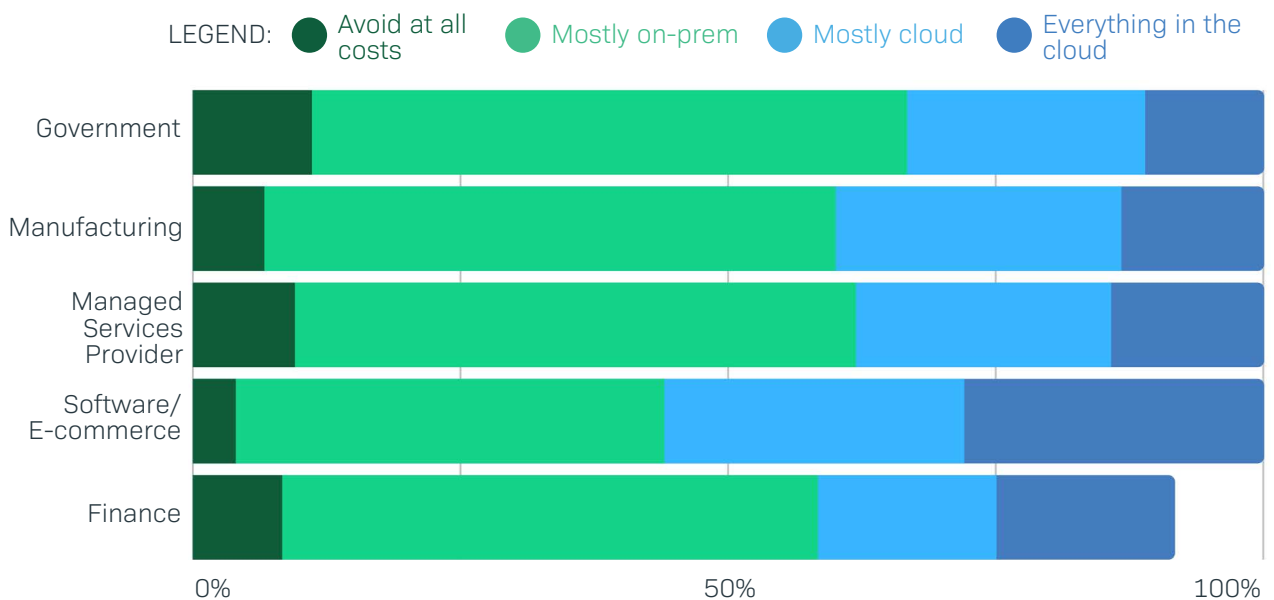
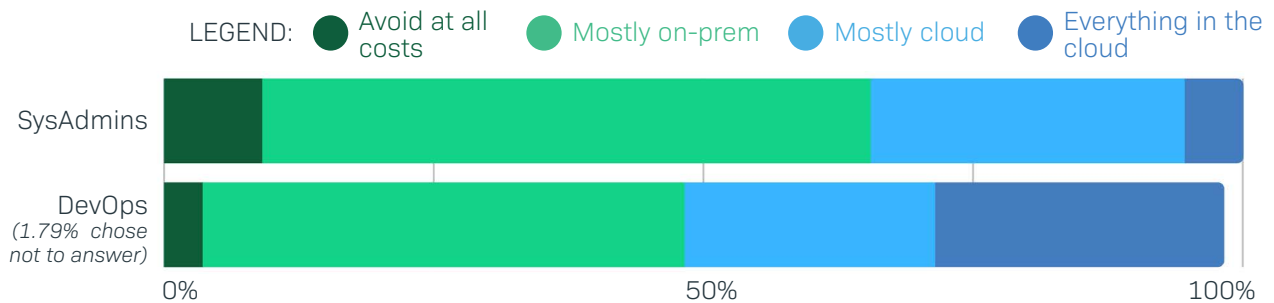RESPONDENT

INDUSTRY OPINION ABOUT THE CLOUD

We have taken a closer look at the industries from where we had the most respondents (Software/E-commerce, Managed Services Provider, Manufacturing, Finance and Government)
For any industry keeping their own assets in the cloud seems to be preferred the most. However, the results suggest that people who work in the government are most likely to avoid the cloud at all costs, while those working in the software industry would most likely have the cloud as their go-to solution.

This means that people who want to work in the government might have to focus on learning to manage physical infrastructure while those who want to work in the software industry should focus on managing the organization's cloud services.
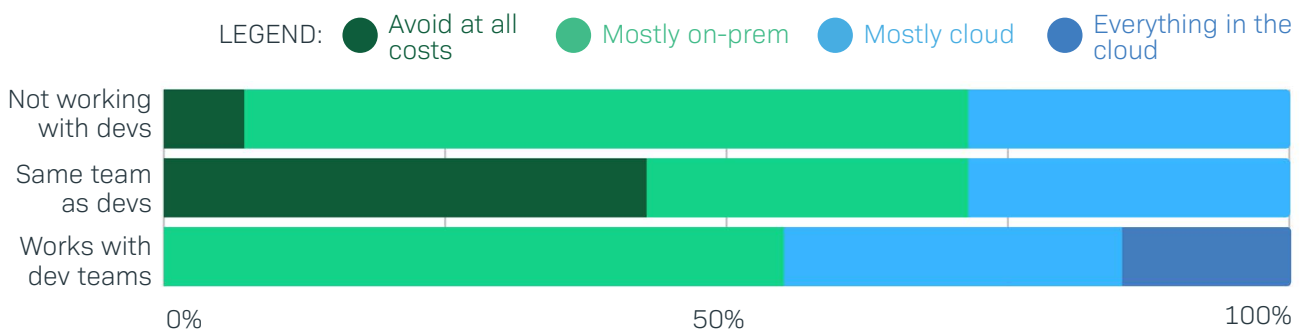

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ARE SYSADMINS, TRADITIONALLY ON-PREM ADVOCATES, CHANGING THEIR OPINION ABOUT THE CLOUD?

LEGEND: ● Avoid at all costs ● Mostly on-prem ● Mostly cloud ● Everything in the cloud

SysAdmins

DevOps
(1.79% chose not to answer)

0%   50%   100%

SysAdmins are still least likely to have the cloud as a go-to solution. They would still most likely keep their assets on-premises. On the other hand, DevOps professionals would more likely prefer putting their assets on the cloud. They are more likely to have the cloud as a go-to solution than SysAdmins.
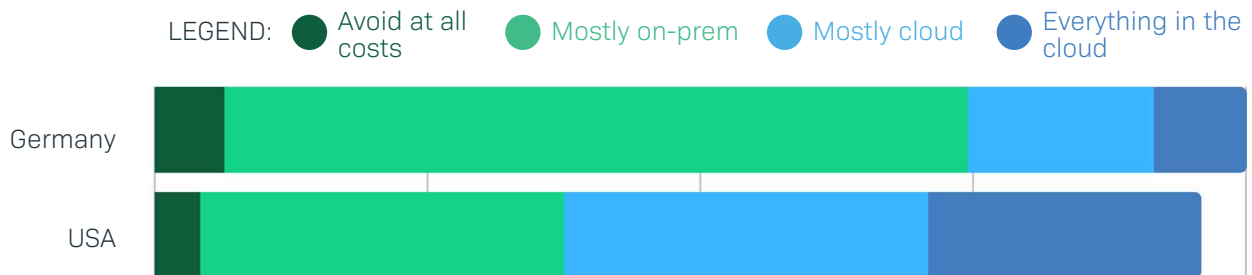
This suggests that people who want to go into DevOps should be comfortable with managing cloud services and a bit of physical infrastructure. While physical infrastructure is still a big topic to for SysAdmins, the results suggest that there is now trend where SysAdmins need to balance a hybrid infrastructure, that is, on-premises and the cloud.

LEGEND: ● Avoid at all costs ● Mostly on-prem ● Mostly cloud ● Everything in the cloud

Not working with devs

Same team as devs

Works with dev teams

0%   50%   100%

Taking a closer look on the types of role and their preference to the cloud, we found out that all SysAdmins who answered that that the cloud is their go-to solution (5.45% of all the SysAdmin respondents) also reports that they work closely with development teams. This suggests that how closely you work with development teams influences an organization's preference to use the cloud.

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OPINION ABOUT THE CLOUD IN GERMANY VS USA

We take a closer look on the results of the top countries where our respondents came from, namely Germany and the US.

LEGEND: ● Avoid at all costs   ● Mostly on-prem   ● Mostly cloud   ● Everything in the cloud

Germany

USA

For German respondents, most people would keep most assets in their own infra. In the US, respondents are having mixed opinions, but majority is in the direction that they would prefer to use the cloud more.

COLLABORATION OF SYSADMINS WITH DEV TEAMS

49% of those who fall under the SysAdmin category reported that they also work closely with development teams. Most of them also shared that their collaboration with the devs are most effective. Here's the top types of tools they use to collaborate with dev teams:

1. Monitoring
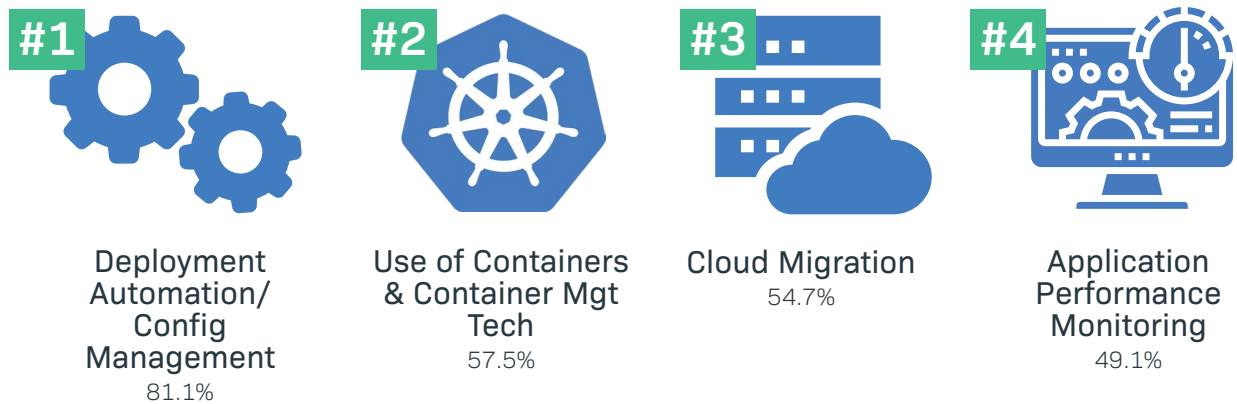2. Documentation/Project Management
3. Version Control
4. ITSM software
5. CI/CD

However, 50% of those SysAdmins working closely with developers reported that they aren't satisfied with the teams' approach to IT monitoring, but they are working on it.

50% of the SysAdmin respondents who work closely with developers are NOT satisfied with their teams' **monitoring approach**
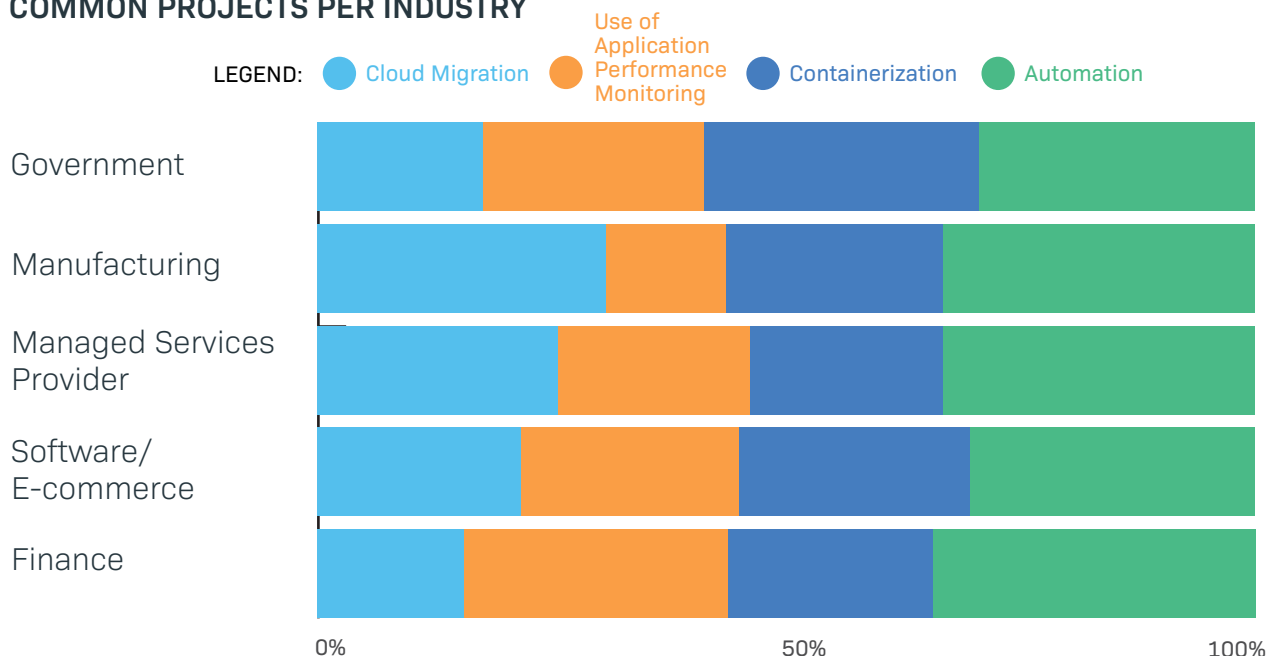
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RECENT CHANGES IN THE COMPANY

To stay up to date in the industry, it's helpful to have an idea of the projects that companies are currently running.

#1 Deployment Automation/ Config Management 81.1%

#2 Use of Containers & Container Mgt Tech 57.5%

#3 Cloud Migration 54.7%

#4 Application Performance Monitoring 49.1%

Interestingly, the biggest topic was deployment automation and config management. Most respondents replied that they have seen big projects in this area in their company over the last 3 years. The majority also thinks that these turned out to be good decisions.

We should expect to see more of these initiatives in the future and should learn the skills needed to execute them. Especially for automation, there is a plethora of tools available like Ansible, Chef, Salt, among others.
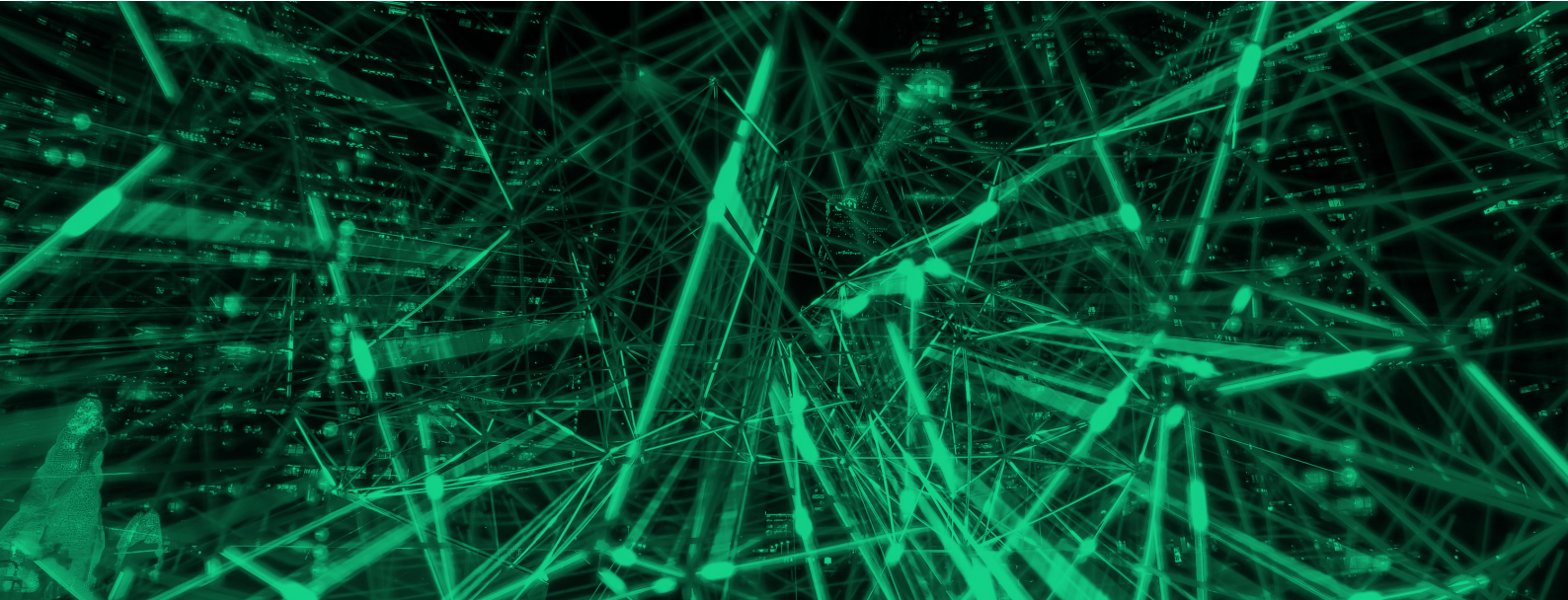
COMMON PROJECTS PER INDUSTRY

LEGEND: ● Cloud Migration ● Use of Application Performance Monitoring ● Containerization ● Automation

- Government
- Manufacturing
- Managed Services Provider
- Software/ E-commerce
- Finance

0%   50%   100%

It is common in all industries recently to use automation for deployment. However, it seems that the in manufacturing industry, migrating to the cloud recently has become more common. The results also suggest that some companies in the finance industry are starting to pay attention to application performance monitoring. Government agencies seem to also explore the use of containers.
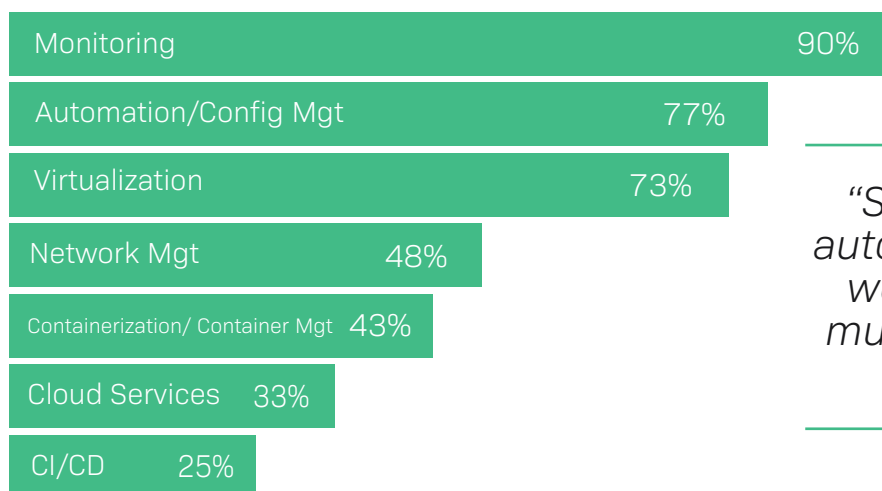
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04
Adapting to Changes

It's important for professionals in the IT industry to keep themselves updated with the trends in the field to ensure their organization will not miss out on any opportunity and stay ahead of their competition. In this survey, we also asked our respondents to share their tools of the trade, what they think one should learn to stay on top of their work, and what people who want to enter the industry learn.

THE TOOLS OF THE TRADE

In IT operations there are so many tools one can use, and mastering them isn't easy. Knowing the most common tools used in the industry can be helpful to know where to start. Here's what our respondents think.

Category	Percentage
Monitoring	90%
Automation/Config Mgt	77%
Virtualization	73%
Network Mgt	48%
Containerization/ Container Mgt	43%
Cloud Services	33%
CI/CD	25%

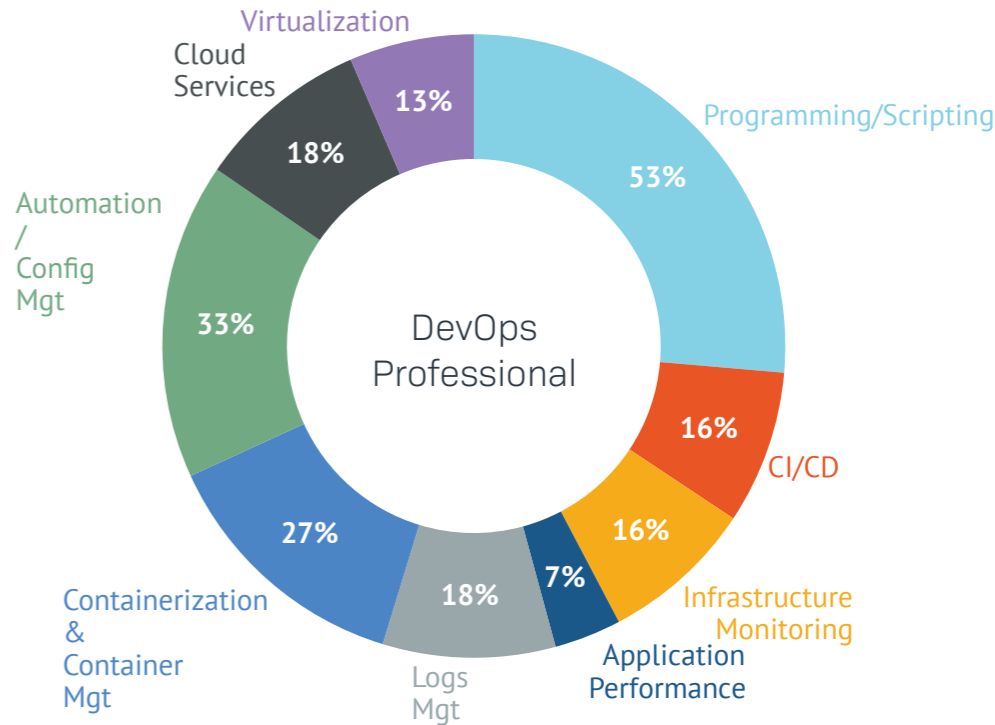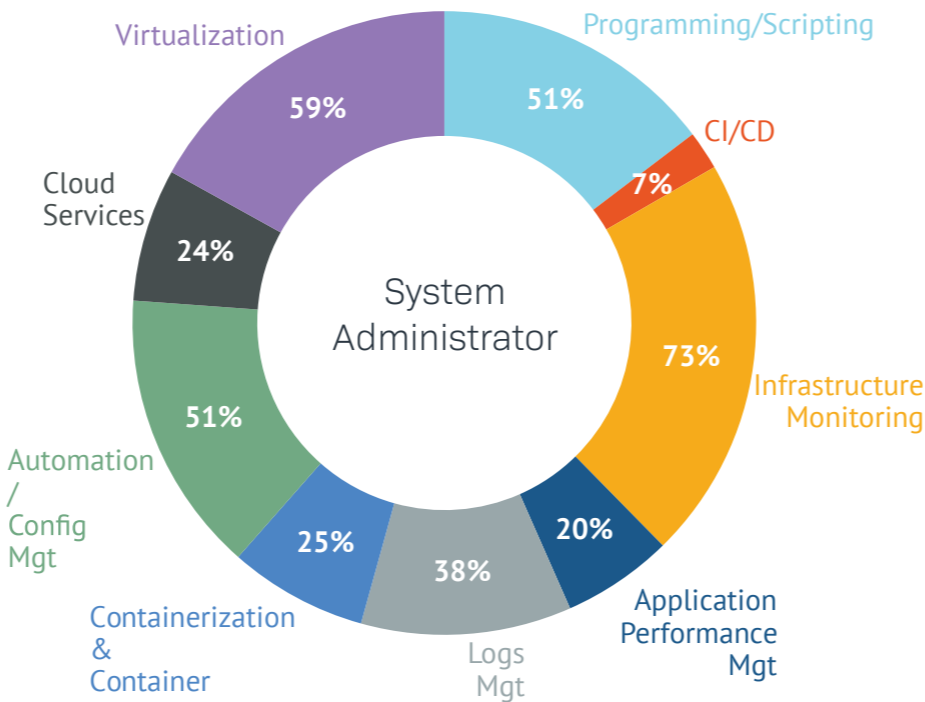*"SysAdmins have to automate more of their work– to do so they must push vendors to improve APIs".*

Each category consists of a vast amount of tools, but it's not advisable to just master one category. Try to learn some tools from each category instead of focusing on one.

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THE MOST IMPORTANT TECHNICAL SKILLS

To stay on top of your work as a SysAdmin, it is important to know what you should learn for your personal development. Our respondents shared what they have learned or have been learning in the past year. We grouped the responses based on the type of SysAdmin.
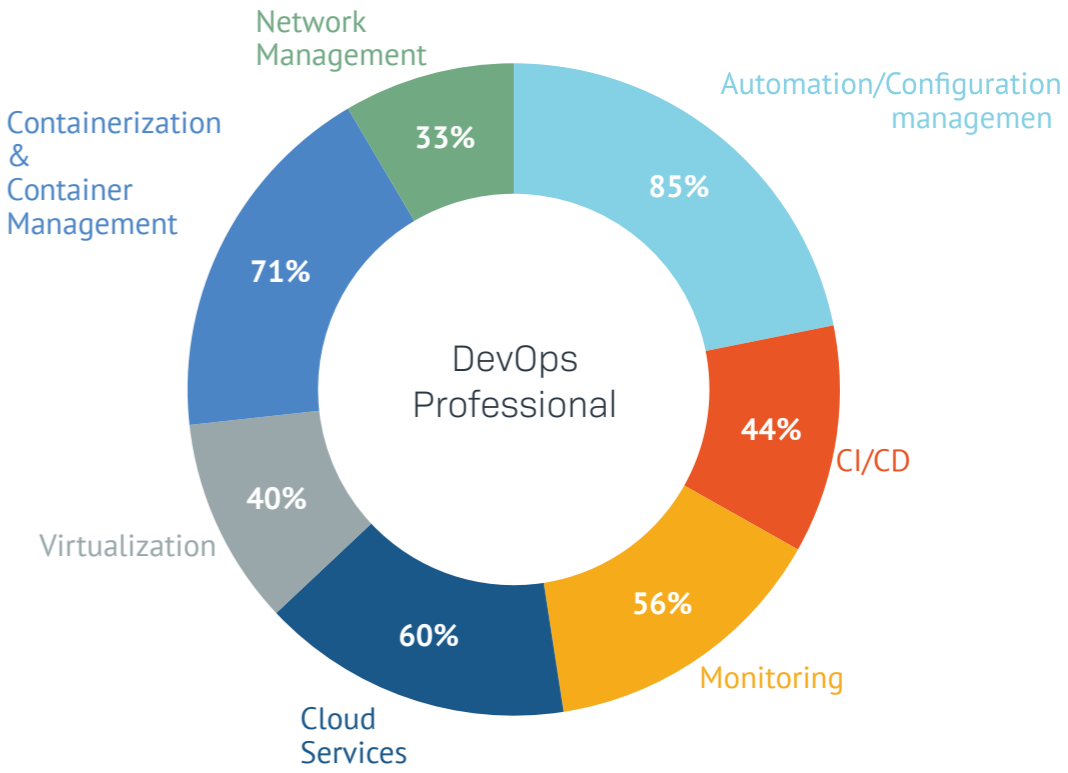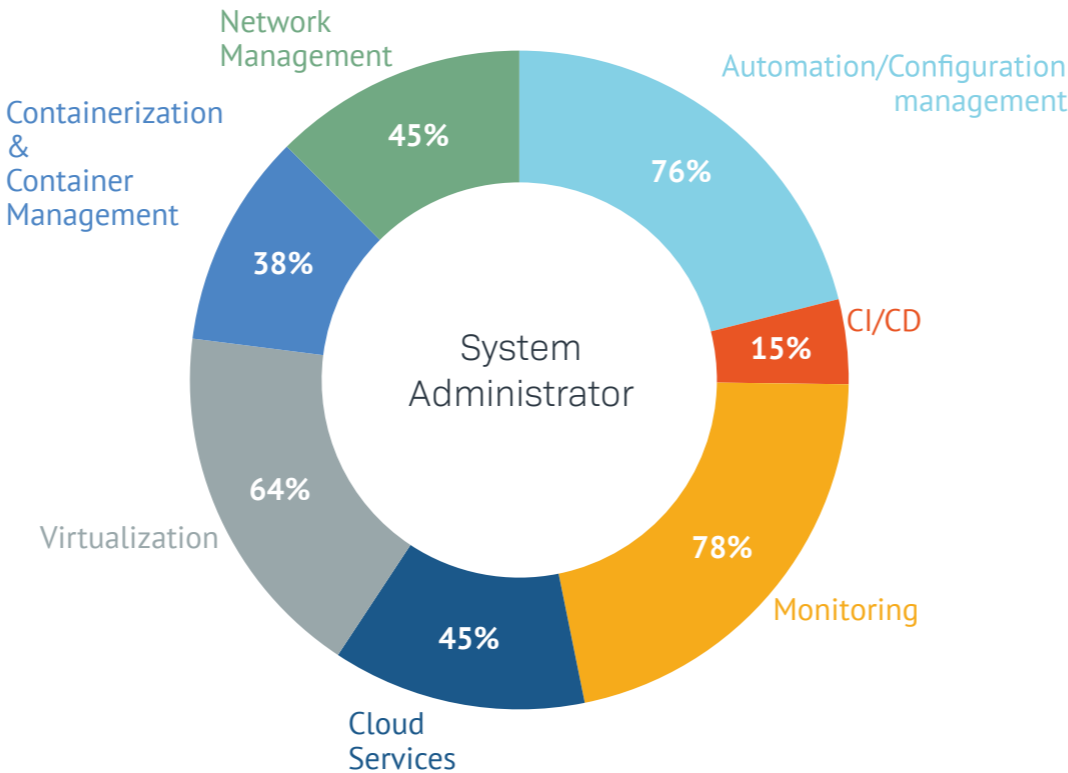
"Learning how to code is necessary in order to get to a better role today. Having knowledge in both infrastructure and software engineering is an advantage and can be very helpful when designing applications that are reliable."

System Administrator

- Programming/Scripting 51%
- CI/CD 7%
- Infrastructure Monitoring 73%
- Application Performance Mgt 20%
- Logs Mgt 38%
- Containerization & Container 25%
- Automation / Config Mgt 51%
- Cloud Services 24%
- Virtualization 59%

DevOps Professional

- Virtualization 13%
- Cloud Services 18%
- Automation / Config Mgt 33%
- Containerization & Container Mgt 27%
- Logs Mgt 18%
- Application Performance 7%
- Infrastructure Monitoring 16%
- CI/CD 16%
- Programming/Scripting 53%

SKILLS TO LEARN TO GET INTO IT OPERATIONS

For people aspiring to become a SysAdmin, it's helpful to have an idea where to start. We asked SysAdmins what they would recommend people to learn to become like them, again grouped by the type of SysAdmin.

"Sysadmins should learn how to code in Python and shell script. These are must-have skills. Monitoring should be treated more seriously, and CI/CD pipelines should be components and be owned by multiple teams in order to ensure that no single team has too many power/security influence."

System Administrator

- Network Management 45%
- Automation/Configuration management 76%
- CI/CD 15%
- Monitoring 78%
- Cloud Services 45%
- Virtualization 64%
- Containerization & Container Management 38%

DevOps Professional

- Network Management 33%
- Automation/Configuration managemen 85%
- CI/CD 44%
- Monitoring 56%
- Cloud Services 60%
- Virtualization 40%
- Containerization & Container Management 71%

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About Checkmk

Checkmk is a flexible and scalable monitoring solution for heterogeneous IT landscapes. It enables you to monitor applications, networks, containers, storage, devices, servers, virtual, hybrid and cloud environments and more. Checkmk provides plugins for Windows, Linux and other systems, but also works without agents on devices via protocols like HTTP, SNMP, or by using applications' APIs.

Checkmk is available in two editions: the open source Checkmk Raw Edition and the Checkmk Enterprise Edition.

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